GENERAL NOTICE

NOTICE 1260 OF *2005*

Safety in Mines Research Advisory Committee (SIMRAC) on behalf of the Mine Health and Safety Council (the Council)

Invitation to submit project proposals

SIMRAC, a permanent committee of the Mine Health and Safety Council, was established in terms of the Mine Health and Safety Act (29/1996) to conduct research and surveys regarding, and for the promotion of, health and safety in the South African mining industry. Suitably qualified agencies and/or persons are invited to submit proposals in response to the project specifications in this Notice. In soliciting research projects for the 2006/2007-research programme, the Council has the following goals:

- to indicate the current research needs for research to commence in the 2006/2007 cycle;
- to invite research proposals in response to these defined priority areas of research; and
- to invite applications for postgraduate funding for research which will promote health and safety within the South African mining industry.

A consultative process has resulted in the Council formulating a co-ordinated, long-term health and safety research programme and identifying priority areas for research to commence in the 2006/2007 cycle. Researchers and agencies are invited to submit research proposals for the research projects indicated. Proposed research must be well designed with a detailed methods section, be ethical and must have the potential to add to existing knowledge, practice or technology, involve the end users and implement/transfer outputs. Research teams must have the specified skills.

Submission of Proposals

1. Proposals must be submitted in accordance with the prescribed format. Contact Cecile Gomes at telephone **011 358 9180,** fax **011 403 1821**, e-mail cgomes@ mhsc.org.za or visit the SIMRAC website www.simrac.co.za to download the submission template.

2. Queries regarding the aims and objectives of the thrusts listed in this notice can contact the following persons:
Rock Engineering: Duncan Adams at dadams@mhsc.org.za **(011 358 9184)**
Engineering and Machinery: Dragan Amidzic at damidzic@mhsc.org.za **(011 358 91**
Occupational Health: Audrey Banyini at abanyini@ mhsc.org.za **(011 358 9183)**
SIMRAC Chairperson: Piet Botha at pieter.botha@ mhsc.org.za **(012 317 9303)**
Proposal Submission: Cecile Gomes at cgomes@ mhsc.org.za **(011 358 9190)**

3. Proposers are requested to take note of past work in the different thrust areas. (Details are available on website www.simrac.co.za).

Guidelines for the Council postgraduate research and Ethics Guidelines are obtainable from nwoods@ mhsc.org.za

- Obtain and evaluate information to establish evidence-based risk assessment, standard setting and health and safety performance measurement;
- Develop techniques or guidelines to prevent, reduce, control or eliminate risks;
- Develop and pilot innovative ideas and procedures, where appropriate, to eliminate, reduce or control risk;
- Obtain information on the extent of work-related ill health;
- Identify, develop and improve sampling and measurement techniques to detect environmental hazards and assess personal exposure;
- Understand the aetiology and identify and evaluate best-practice screening, diagnostic and treatment interventions to reduce the impact of occupational disease;
- Evaluate the effectiveness of control interventions;
- Understand risk perception, attitudes and behaviour related to health and safety and promote best practices in hazard recognition and procedural conformance;
- Empower its statutory committees to formulate policy, expedite research aimed at improving the health and safety in the South African mining industry; and
- Collaborate with national and international initiatives and research to promote health and safety in the mining industry.

The criteria by which proposals will be evaluated include:

- **Added value and impact** – the Council supports research which can contribute significantly to the improvement in the health and safety of South African miners;
- **Value** for **money** – the Council supports cost-effective research;
- **Innovation** – the Council welcomes new approaches or new areas of focus for research leading to technologies or best practices to improve health and safety;
- **Excellence** – the Council demands excellence, particularly in the methods employed to conduct research, be it quantitative or qualitative, and hence will consider the track record of the proposer/s for expertise and delivery (quality, time and to budget);
- **Use and development of research skills** – the Council requires research teams to possess the skills relevant to the success of the project and also favours projects which assist in developing research capacity, particularly in previously disadvantaged groups;
- **Collaboration** - the Council places a high priority on collaboration between researchers and the "teams of excellence" approach. Thus, the means of soliciting research proposals is intended to stimulate collaboration between centres of excellence and individual experts in order to optimise the use of the Council funding and the research outcomes.
- **Development of key indicators** – the Council recognises the challenge in assessing performance and improvement in health, as opposed to safety, in the mining industry. There is a lack of suitable occupational health (OH) indicators and baseline data. Thus innovative and robust research to develop relevant OH indicators and baseline values will be favourably considered.

The Council's research and implementation programme consists of occupational health and safety, addresses occupational medicine and hygiene, rock engineering, engineering and machinery, behavioural issues and technology transfer processes.

Each proposal must:

- Address only the research topic advertised and this must be specified;
- Be in the format indicated and the template specified using Word format; and
- Be phased as indicated in the project scope.

4. The closing time and date for the receipt of the proposals is **12:00 on Monday 03 January 2006.** Late entries will not be considered.

5. Two copies of each proposal, in a sealed envelope, in a form suitable for photocopying **plus** a disk or CD with the proposal in MS Word, should be deposited in the repository labeled "Proposals" at the Council's offices[2].

6. The Council may at its sole discretion, decide to recommend the acceptance, rejection or amendment of any proposal and to commission the team to develop the proposal on the basis of which the contract is awarded. The Council shall not furnish any reasons for its decisions regarding proposals.

7. Every proposal accepted by the Council would be subject to a set of Terms and Conditions, which on acceptance of the final detailed proposal will form part of the contract applicable to the project. All prospective proposers should peruse a set of the standard terms and conditions prior to submitting a proposal. A copy of the draft standard terms and conditions is attached to this Notice.

8. In compiling proposals, prospective proposers should provide details of methods, identifiable outputs and estimated costs as indicated.

9. The Council will endeavour to solicit the services of South African organisations to undertake projects, but will consider proposals from overseas-based organisations if expertise, cost considerations and local capacity building components compare favourably.

10. The Council requires full disclosure regarding all subcontracts included in the proposal.

11. The proposer and any of its affiliates shall be disqualified from providing other goods, works, or services under the project if, in the Council's judgment, such activities constitute a conflict of interest with the services provided under the assignment/project.

12. Where an output includes a device, mechanism, procedure, or system capable of being applied in the mining environment, a prospective proposer shall include in the proposal an output which suggests how the outputs in question might best be applied in practice. In drafting proposals, all prospective proposers should bear in mind the potential for technology transfer and phasing the project as indicated.

13. The period for which the proposals should be held valid is 150 days.

14. During this period the proposal must undertake to maintain, without change, the proposed key staff, and must hold to both the rates and total price proposed; in case of extension of the proposal validity period, it is the right of the proposer not to maintain their proposal.

15. The anticipated commencement date of the projects is 1 April 2006.

16. Each successful proposer may, during the contract period or shortly after its completion, be required to provide:

[2], 2nd Floor, Braamfontein Centre, 23 Jorissen Street, Cnr. Bertha Street, Braamfontein

- A competent spokesperson with appropriate materials to make not more than two separate presentations, on an annual basis for the duration of the project, and
- A technical paper on the project for publication and/or a poster presentation, without additional remuneration or reimbursement of costs.

These activities must be detailed and costed within the project.

14. Where relevant, proposers may obtain copies of earlier project reports and other information from the website address or from contacts listed (See paragraph 1 and 2).

15. Proposers are advised that all Council projects should be submitted to language editing and may be subjected to technical and financial audits. Funding for editing and audits should be included in the proposal budget.

16. Proposers should substantiate and cost separately, all proposed travel outside the borders of South Africa in connection with the project, and provide details of all expenses such as travelling and subsistence.

17. All proposed project costs must be expressed in South African Rands and the total price must be VAT inclusive. Fluctuations in the exchange rate and purchase of forward cover should be considered when costing the proposal.

18. The Council will take all reasonable steps to ensure that confidentiality of proposals is maintained during the adjudication process. If a proposal is not accepted within the programme, the Council may invite additional proposals on the topic.

19. No unsolicited proposals will be included in the programme for 2006/7.

20. The following three-stage evaluation procedure will be followed:

a. A technical evaluation of the proposal that will consist of the following items and weight allocations:

1.	Capability and capacity of the project team	
1.1	Relevantformal qualifications	5
1.2	Knowledge of relevant OHS issues in mining industry	5
1.3	Experience in conducting research in this area	5
1.4	Balance of team composition and competencies	5
1.5	Resources and facilities available	5
1.6	Track record: quality, on-time and within budget	5
2.	Research design and methods	
2.1	Appropriate study design and proptocol	5
2.2	Representivity, sample, strategy and size	5
2.3	Technical methods (tests etc)	5

2.4	Intended analysis of results	5
2.5	Ethics, risks and limitations	5
3.	**Research** outputs	
3.1	Appropriate format	**5**
3.2	Usefulness	**5**
3.31	Potential impact	**5**
3.4	Technology transfer	5
	Total Score – Technical	**75**

b. A price evaluation that will be calculated as follows:

Ps = (Pmin/Pt) * Ap

Where

Ps = % scored for price by proposal being evaluated

Pmin = price of lowest bidder

Pt = price of proposal being evaluated

Ap = % allocated for price aspect of proposal (**15%**)

c. A preferential procurement purposes using the following criteria and weightings:

- The proposals will each be given a score out of 100 that will be converted to a score out of 10 for the SIMRAC evaluation process
- Commercial Entities will be evaluated against the following criteria and weightings:
  - Ownership - **20%**
  - Management - 10%
  - Employment Equity & Skills development – 30%
  - Preferential Procurement – 30%
  - SMME Status – 10%
- National Institutions and Public Entities will be evaluated against the following criteria and weightings:
  - Ownership - 0%
  - Management - 30%
  - Employment Equity & Skills development – **40%**
  - Preferential Procurement – 30%

Objectives of the Council research programme

The **objectives** of the Council in commissioning health and safety research, for both general and commodity-based projects, are to:

SIM 06 02 02

Thrust 2: Rockfalls

Project title

Use of closure monitoring in UG2 stopes of the Bushveld Complex to identify hazardous conditions.

Motivation

A current SIMRAC project (SIM 040207) is investigating the closure behaviour of various platinum stopes in the Bushveld Complex. A major interim finding of this project is that these measurements are very useful to identify areas prone to falls of ground. In some stopes on the Merensky Reef horizon, where large falls of ground were experienced, clear precursory information was obtained from the closure data. Such data may be useful for developing leading indicators. As the current database contains a large amount of data from Merensky panels, but only limited data from the UG2 reef horizon, it is proposed to extend the current database by installing closure instruments in additional UG2 stopes. Monitoring at these additional sites is required to verify the potential of using closure measurements to warn of potential large collapses and to identify hazardous conditions.

Primary outputs

1. Recommendations on the use of closure measurements on the UG2 reef horizon to identify hazardous conditions and give warning of potential large collapses.
2. Recommendations on the use of closure monitoring to optimize mining parameters such as mining rate, panel spans and support.

Scope

It is planned to instrument at least 10 sites on the UG2 reef horizon. Workshops with industry representatives will be required to decide on the most appropriate sites.

Estimated duration and cost

12 months at R500 000

Typical recipients of the Report

Council committees, the DME, rock engineers and mine management.

Requirement for technology transfer

Preparation of a practical booklet to illustrate the value of continuous closure measurements in UG2 stopes.

Special skills and facilities required by project team

Skills to run underground sites and instrumentation programmes. Previous involvement in stope closure measurements.

SIM 06 05 *03*

Thrust 5: Machinery and Transportation Systems

Project title

Identify the reasons for electrical accidents in SA mines

Motivation

The SAMRASS database has indicated a sudden increase in fatal accidents caused by electrocution in the South African mining industry. During the period 2001 and 2004 (inclusive), electrocutions have accounted for about 4% of fatalities in the Machinery and transportation thrust area. However, the period between 2001 and 2005 showed an increase to 10%. This represents about 7 people losing their lives per annum due to electrocutions. This risk cannot be ignored. SIMRAC has not undertaken any research into this problem.

This projects aims to investigate the extent to which electrocutions in the mining industry can be mitigated, by the identification of the main causes of electrocutions. In the industry in the past 5 years It also aims to identify any researchable work that is required in order to reduce this risk.

Primary outputs

A report explaining the main reasons for fatal electrocutions in the South African mining industry, and suggestions for their mitigation.

Scope

Review the SAMRASS data and any other credible source of information and establish the reasons for electrocution fatalities. Conduct interviews with the mining industry role players (including members of the CM&EE, SACEA and AMRE) to obtain a balanced view of this problem. Recommend specific areas of further research, if any. The following areas must be investigated:

- Review possible sources of information on recent electrical accidents, starting with the SAMRASS data.
- Identify possible causes of such accidents.
- Comment on the applicability of lock-out procedures.
- Determine if there are any obvious trends or patterns to the accidents.
- Review AMRE papers on electrocutions.
- Catagorise route causes taking the various mineral commodities into consideration
- Determine the category and skill level of person normally involved in such accidents.

Estimated duration and cost

6 months at R 300 000

Typical recipients of the Report

MHSC stake holders

***Requirement* for technology transfer**

Report providing a list of causes of electrocutions in the SA mining industry.

Special skills and facilities ***required* by *project team***

Research and electrical skills.

SIM 04 09 05

Thrust 9: Special Projects

Project title

A database of catastrophic accidents in the South African mining industry.

Motivation

Accidents that have occurred at one mine still occur at other mines. It is not possible to make all mines aware of all accidents, and their circumstances, thereby limiting the opportunity of learning from the experiences of others. The situation is more serious in the case of accidents that could be classified as major. Examples of these are; Kinross, Mponeng, Beatrix and 2 Shaft at Vaal Reefs. Soon, their memories may fade and people new to the industry might never know about them. This is viewed as a major gap in the dissemination and preservation of information that could make a difference in the industry, with regards to safety. This study aims to identify and compile a database of such accidents, stating the event, when and where it occurred, the consequences of the accident, possibly causes and recommended control tools that could be put in place to prevent similar occurrences. The database would be available to all mines and would particularly benefit small mines, as they would not have the resources to generate their own information bases.

Primary outputs

A database that identifies and informs the reader about major accidents (where 6 or more lives were lost) in the SA mining industry and control measures that could be put in place to prevent re-occurrence.

Scope

- Identify catastrophic or major accidents and briefly state when and where they happened, consequences, possible reasons, and what could be done to eliminate future occurrences. Select accidents involving 6 or more fatalities.
- Avoid apportioning blame to any part. Report must be factual.
- Where illustrative sketches can add value, they must be *used.*

Estimated duration and cost

12 Months at R 450 000

Typical recipients of the Report

MHSC stakeholders

Requirement for technology transfer

CD

Special skills and facilities required by project team

Safety on the mines experience and research and writing skills. An engineering qualification will be an advantage.